

Abstract

A circuit for use in a radio transceiver (100), the circuit comprising modulator means (114) for receiving digital signals ( $I_T, Q_T$ ) for application in combination to control the phase of a carrier to produce a transmission signal for transmission by the transceiver during a transmission mode; demodulator means (126) for demodulating a received signal during a reception mode to recover from the received signal digital signals ( $I_R, Q_R$ ) representing components of the phase thereof; wherein the demodulator means is coupled to the modulator means to receive therefrom in operation during the reception mode a reference signal indicating the phase of the transmission signal whereby there can be recognised from the received signal which is demodulated the phase applied in the transmission mode thereby to facilitate separation of signal from noise. A transceiver incorporating the circuit may be used in a method of inspecting or authenticating a surface of interest which comprises irradiating the surface with a radio signal which is obtained from the transmission signal of the transceiver and analysing a returned signal from the surface as the received signal received by the transceiver.

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